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SIR DAVID GILL (1843–1914)

Foreign Honorary Member in Class I, Section 1, 1910.

David Gill was born at Aberdeen, Scotland, on June 12, 1843. His higher education was received in Marischal College and University, Aberdeen. There he came under the inspiring influence of James Clerk Maxwell. Gill's tastes had developed along the lines of physics and chemistry, but his father, who was a prosperous horologist, influenced the son to enter the clock business. David Gill mastered both the commercial and the technical sides of the work, but he did not cease to dream about a career in pure science. Such time as could be spared from business, beginning with 1863, he devoted to re-establishing the observatory of King's College in Aberdeen University, as a basis for supplying accurate time signals to the university and city. In the years 1868–73 he gave much spare time to the construction and use of his own observatory in Aberdeen. He designed the mounting for a 12-inch reflecting telescope, and with his own hands constructed the excellent driving clock of the telescope. His observations related mostly to double stars and nebulae.

In 1872 he gave up his well established and prosperous business in order to devote his talents exclusively to astronomical science. He accepted the invitation of the Earl of Crawford and his son, Lord Lindsay, to take charge of the splendid private observatory which they had decided to construct at Dun Echt. Lord Lindsay's plans included an expedition to the Island of Mauritius to observe the transit of Venus, in 1874. Lindsay and Gill took advantage of the trip to determine the longitude of Mauritius, by means of telegraphic signals sent between Greenwich and Aden, and thence by transport of chronometers between Aden and Mauritius. While at Mauritius Gill made heliometer observations of the minor planet Juno, for a new determination of the value of the solar parallax. This was the beginning of a long series of heliometer observations by Gill to improve our knowledge of the Sun's distance from the Earth.

On the return journey from Mauritius Gill accepted the invitation of the Government of Egypt to measure a primary base line near the Pyramids of Gizeh for the projected geodetic survey of Egypt.

Gill's expedition to the Island of Ascension to observe Mars at the especially close approach of that planet in 1877, to determine anew the solar parallax, was a memorable event in his career. The success of his work on the Mauritius and Ascension expeditions was the chief factor leading to his selection as Her Majesty's Astronomer at the Cape of Good Hope, in the year 1879. The Cape Observatory had enjoyed an honorable history, dating back to 1820, and the traditions as to its most profitable fields of activity were well developed. Gill accepted these traditions as a guiding principle, but his ability as an observer, his mechanical skill in designing practicable instruments of greater power and accuracy, and his enthusiasm and energy gave new life to the institution, and in a few years it was in the front rank of existing observatories. His administration was marked by a great expansion of financial and personal resources; by the development of the heliometer method of determining solar parallax and stellar parallaxes; by marked advances in our knowledge of the distances of the Sun and the brightest stars; by more accurate and more extensive observations of stellar positions, with improved meridian instruments; by a photographic durchmusterung of the southern sky between declination -18° and the South Pole, which made available the approximate positions of 400,000 stars, a work in which Professor Kapteyn collaborated heroically; by the inauguration of spectrographic observations for determining the radical velocities of the southern stars; by a splendid determination of the solar parallax from the radial velocities of certain stars; and by many other contributions in instruments, methods and results which lack of space prevents us from describing.

Gill's influence was not confined to the Cape Observatory. It was one of the chief factors in inaugurating and carrying forward the International Photographic Catalogue plans, which involve the laborious charting of the entire sky by photography, on the scale of 1 mm. to one minute of arc, by many observatories.

In no direction were Gill's technical and administrative ability and his personal influence more potent and wise than in the plans for the Geodetic Survey of South Africa. The political aspects of the problem were not simple, for his plans related to a comprehensive system of triangulation extending over several independent states. The physical difficulties resulting from climatic and other conditions were formidable. In no continent have the plans for geodetic surveys been conceived and carried out with higher standards.

A long list of honors came to Gill in recognition of his services to his country and to science. He was created Companion of the Bath in 1896, and Knight Commander in 1900. He was appointed a Commander of the Legion of Honor (France) in 1908, and a Knight of the

Prussian order "Pour le Merite" in 1910. He was a correspondent of the Institute of France and of the Paris Bureau of Longitudes; a foreign member of the Academies of Sciences in Berlin, Rome, St. Petersburg, Amsterdam, Haarlem, and Stockholm; a foreign member of the National Academy of Sciences, of the American Academy of Arts and Sciences, of the American Philosophical Society, of the Italian Spectroscopic Society, etc.; an honorary member of the New York Academy, of the American Astronomical Society, etc. He was president of the British Association for the Advancement of Science in 1907–8. He was honored by appointments to many other national positions in South Africa and in Great Britain. He received the Watson Gold Medal of the National Academy of Sciences in 1900; the Bruce Gold Medal of the Astronomical Society of the Pacific in 1900; the Gold Medal of the Royal Astronomical Society in 1882, and a second time in 1908; the Valz Medal of the Paris Academy in 1882; and the Royal Medal of the Royal Society in 1913.

Gill retired from service at the Cape in 1907. His lamented death occurred in London on January 24, 1914. The intervening seven years were devoted assiduously to the advancement of astronomical and related sciences and to public service. Shortly before his death appeared his "History of the Cape Observatory," a record of remarkable achievement which all astronomers should read.

Sir David Gill made for himself a place in the front rank of astronomers.

This biography would be seriously lacking if it failed to mention Lady Gill. It was with her approval that the change from a lucrative business to the small income of an astronomical position was made in 1872. Her assistance and encouragement were invaluable on the expedition to Ascension, and to Gill's life of twenty-eight years at the Cape of Good Hope.

W. W. CAMPBELL.